AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A method for matching an upper protocol layer to a high speed serial bus, comprising the steps of:

(a) checking whether the length of a packet transferred from an upper layer to a node of the high speed serial bus is no less than a predetermined length;

(b) allocating a channel of the bus and transferring data through the channel by an isochronous transfer service when it is determined that the length of the packet is no less than a predetermined length in the step (a); and

(c) transferring the data by an asynchronous transfer service when it is determined that the length of the packet is less than a predetermined length in the step (a);

determining whether a channel is allocated to an entry information of said packet, wherein said step of checking whether the length of said packet is no less than a predetermined length is performed if no channel is allocated based on said entry information of said packet.

2. (original): The method of claim 1, wherein the predetermined length is a maximum transfer unit (MTU) defined by the TCP/IP protocol in the step (a).

3. (original): The method of claim 1, wherein the step (a) is performed in the IP 1394 layer and the IP 1394 layer comprises a channel Matron for performing the step (a) and an address resolution protocol (ARP) 1394 layer.

4. (original): The method of claim 2, wherein the step (a) is performed by the IP 1394 layer and the IP 1394 layer comprises a channel Matron for performing the step (a) and an address resolution protocol (ARP) 1394 layer.

5. (original): The method of claim 1, wherein the high speed serial bus meets the requirements of the IEEE 1394 standard.

6. (original): The method of claim 2, wherein the high speed serial bus meets the requirements of the IEEE 1394 standard.

7. (original): The method of claim 3, wherein the high speed serial bus meets the requirements of the IEEE 1394 standard.

8. (currently amended): A method for matching an upper protocol layer to a high speed serial bus, comprising the steps of:

(a) determining whether the length of a data packet transferred from an upper layer to a node of the high speed serial bus is no less than NxMTU wherein N is a positive number which is smaller than 1 and MTU is the maximum transfer unit defined by the TCP/IP protocol;

(b) determining that the data packet is stream data, allocating a channel of the bus, and transferring data by an isochronous transfer method when it is determined that the length of the data packet is no less than NxMTU; and

(c) determining that the data packet is not the stream data and transferring data by an asynchronous transfer method when it is determined that the length of the data packet is less than NxMTU;

determining whether a channel is allocated to an entry information of said packet, wherein said step of checking whether the length of said packet is no less than a predetermined length is performed if no channel is allocated based on said entry information of said packet.

9. (original): The method of claim 8, wherein the step (a) is performed by the IP 1394 layer and the IP 1394 layer comprises a channel Matron for performing the step (a) and an address resolution protocol (ARP) 1394 layer.

10. (original): The method of claim 8, wherein the high speed serial bus meets the requirements of the IEEE 1394 standard.

11. (original): The method of claim 9, wherein the high speed serial bus meets the requirements of the IEEE 1394 standard.

12. (original): A method for matching an upper protocol layer to a high speed serial bus, comprising the steps of:

(a) determining whether a data packet whose length is a MTU is received from an upper layer to a predetermined node no less than a predetermined number of times for a predetermined time;

(b) determining that input data is stream data, allocating the channel of the bus, and transferring data by an isochronous transfer method when it is determined that the data packet whose length is the MTU is received no less than the predetermined number of times for the predetermined time in the step (a); and

(c) determining the input data is not the stream data and transferring the data by an asynchronous transfer method when it is determined that the data packet whose length is the MTU is received less than the predetermined number of times for the predetermined time in the step (a).

13. (original): The method of claim 12, further comprising the step of determining the input data is not the stream data, returning the allocated channel, and transferring the data by the asynchronous transfer method when it is determined that the data packet whose length is the MTU is received less than the predetermined number of times for the predetermined time in the step (a).

14. (original): The method of claim 13, wherein the step (a) is performed by the IP 1394 layer and the IP 1394 layer comprises a channel Matron for performing the step (a) and an ARP 1394 layer.

15. (original): The method of claim 13, wherein the high speed serial bus meets the requirements of the IEEE 1394 standard.

16. (original): The method of claim 14, wherein the high speed serial bus meets the requirements of the IEEE 1394 standard.

17. (previously presented): The method of any one of Claims 1, 8 or 12, wherein in order to perform the data transfer on the high speed serial bus, a table managing process is performed, the process comprising steps of:

(a) waking up a timer process at predetermined time intervals;

(b) checking whether the current entry corresponds to the end of a Matron note;

(c) letting the timer process sleep when the entry corresponds to the end of a Matron note and waking up the timer process after the lapse of a predetermined time;

(d) reading a status field which displays the status of the entry and checking whether the status field is in an invalid state when the entry does not correspond to the end of the Matron note;

(e) proceeding to a next entry when the status field is in the invalid state and jumping to the step (b);

(f) decreasing a time-to-live (TTL) value when the status field is not in the invalid state;

(g) determining whether the reduced TTL value is larger than 0; and

(h) transiting the status field to the invalid state and returning the allocated channel when it is determined that the TTL value is not larger than 0 in the step (g).

18.-19. (canceled).

20. (previously presented): The method of claim 12, further comprising:

determining whether a channel is allocated to an entry information of said data packet,

wherein said step of determining whether said data packet is received from said upper layer to a predetermined node no less than a predetermined number of times is performed if no channel is allocated based on said entry information of said packet.

21. (new): A method for matching an upper protocol layer to a high speed serial bus, comprising the steps of:

(1) determining whether the length of a data packet transferred from an upper layer to a node of the high speed serial bus is no less than NxMTU wherein N is a positive number which is smaller than 1 and MTU is the maximum transfer unit defined by the TCP/IP protocol;

(2) determining that the data packet is stream data, allocating a channel of the bus, and transferring data by an isochronous transfer method when it is determined that the length of the data packet is no less than NxMTU; and

(3) determining that the data packet is not the stream data and transferring data by an asynchronous transfer method when it is determined that the length of the data packet is less than NxMTU,

wherein in order to perform the data transfer on the high speed serial bus, a table managing process is performed, the process comprising steps of:

(a) waking up a timer process at predetermined time intervals;

(b) checking whether the current entry corresponds to the end of a Matron note;

(c) letting the timer process sleep when the entry corresponds to the end of a Matron note and waking up the timer process after the lapse of a predetermined time;

(d) reading a status field which displays the status of the entry and checking whether the status field is in an invalid state when the entry does not correspond to the end of the Matron note;

(e) proceeding to a next entry when the status field is in the invalid state and jumping to the step (b);

(f) decreasing a time-to-live (TTL) value when the status field is not in the invalid state;

(g) determining whether the reduced TTL value is larger than 0; and

(h) transiting the status field to the invalid state and returning the allocated channel when it is determined that the TTL value is not larger than 0 in the step (g).

22. (new): A method for matching an upper protocol layer to a high speed serial bus, comprising the steps of:

(1) determining whether the length of a data packet transferred from an upper layer to a node of the high speed serial bus is no less than NxMTU wherein N is a positive number which is smaller than 1 and MTU is the maximum transfer unit defined by the TCP/IP protocol;

(2) determining that the data packet is stream data, allocating a channel of the bus, and transferring data by an isochronous transfer method when it is determined that the length of the data packet is no less than NxMTU; and

(3) determining that the data packet is not the stream data and transferring data by an asynchronous transfer method when it is determined that the length of the data packet is less than NxMTU,

wherein in order to perform the data transfer on the high speed serial bus, a table managing process is performed, the process comprising steps of:

(a) waking up a timer process at predetermined time intervals;

(b) checking whether the current entry corresponds to the end of a Matron note;

(c) letting the timer process sleep when the entry corresponds to the end of a Matron note and waking up the timer process after the lapse of a predetermined time;

(d) reading a status field which displays the status of the entry and checking whether the status field is in an invalid state when the entry does not correspond to the end of the Matron note;

(e) proceeding to a next entry when the status field is in the invalid state and jumping to the step (b);

(f) decreasing a time-to-live (TTL) value when the status field is not in the invalid state;

(g) determining whether the reduced TTL value is larger than 0; and

(h) transiting the status field to the invalid state and returning the allocated channel when it is determined that the TTL value is not larger than 0 in the step (g).